

IDAHO DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

NIAGARA SPRINGS HATCHERY Annual Report



1 October 1981 - 30 September 1982 by

David O. Gillman
Fish Hatchery Superintendent I

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ABSTRACT

This year, Niagara Springs Hatchery fed 663,850 pounds of feed to produce 344,169 pounds of fish at a feed cost of \$141,396.46. The conversion rate for the year was 1.93:1 and the feed cost \$.411 per pound of fish produced.

The Snake River below Hell's Canyon Dam received 354,150 steelhead that weighed 79,500 pounds, and the Pahsimeroi River received 995,205 steelhead smolts, weighing 294,850 pounds. The total number of fish released was 1,349,355, and the total number of pounds was 374,350. This is the greatest poundage produced at this site to date.

Niagara Springs Hatchery suffered a heavy outbreak of I.H.N. virus in the spring of 1982, affecting our fry fish. Mortalities on fry from eyed Pahsimeroi eggs reached 89.1% by 30 September. The mortalities on fry from Oxbow eggs reached 54.4% by 30 September.

We received 2,313,339 eyed eggs from Pahsimeroi Hatchery in the spring of 1982, and 253,776 eyed eggs from Oxbow Hatchery, for a total of 2,567,115 eggs received. In addition, we received 274,960 fry from the Pahsimeroi Hatchery and 87,452 fingerlings from the Hagerman National Hatchery, for a total of 362,412 fish received. We received a grand total of 2,929,527 steelhead eggs and fish during 1982.

We ended the 1981-82 year with 697,478 steelhead weighing 14,981 pounds.

Author:

David D. Billman
Fish Hatchery Superintendent I

OBJECTIVES

The objectives of Niagara Springs Hatchery are to:

1. Raise 200,000 pounds of steelhead smolts to be released into the Pahsimeroi River.
2. Eventually raise 200,000 pounds of steelhead to be released into the Snake River below Hell's Canyon Dam.
3. To continue the program of relocation of Snake River steelhead to the Pahsimeroi River and to maintain the steelhead run in the lower Snake River.

INTRODUCTION

Niagara Springs Hatchery is owned and financed 100% by Idaho Power Company. The hatchery is located ten miles south of Wendell, Idaho, in the Snake River Canyon at Niagara Springs. The elevation is 3,000 feet.

The hatchery receives its water from Niagara Springs by gravity flow and requires 110 cfs to operate. The spring water is used for rearing steelhead, domestic use, and to irrigate approximately ten acres of lawn.

The hatchery includes one building 90 feet by 30 feet that houses an office, two incubator rooms, storage room, a small shop, a garage, and three restrooms. Another 12 feet by 36 feet building is used for storage. The chiller building which is 20 feet square houses a 20-ton freezing unit used to chill the water for hauling steelhead at planting time.

There are 14 raceways, 10 feet wide by 3 feet 10 inches deep by 300 feet long. Incorporated in the odd-numbered raceways are 14 fry raceways. These are 15 feet long, 56 inches wide, and three feet deep. The incubator rooms house a total of twenty circular vats six feet in diameter and three feet deep. There are 21 upwelling incubator boxes 12 inches square and 24 inches deep.

There are three, three bedroom homes with double garages for employees, as well as an Idaho Power-owned Kit Oakcrest mobile home, 14 feet by 66 feet. This also has three bedrooms. There are also three trailer pads, one of which is occupied by the mobile home.

FISH PRODUCTION

On 1 October 1981, Niagara Springs Hatchery had 1,365,282 fish that were three to six inches long on hand that weighed 42,077 pounds. We planted 1,349,355 of these fish weighing 374,350 pounds during our planting season, which extended from 2 March through 24 April 1982. This is the greatest number of pounds of steelhead smolts ever produced at Niagara Springs Hatchery.

We received 2,313,339 eyed eggs from Pahsimeroi Hatchery and 253,776 eyed eggs from Oxbow Hatchery during May and June. A total of 2,567,115 eyed eggs were received from the two sources.

Hatching success on the Pahsimeroi eggs was 82.9% (1,917,758 fry), and it was 98.3% (249,462 fry) on the Oxbow eggs.

Pahsimeroi Hatchery also supplied us with 274,960 fry steelhead (1,190 pounds) during August and September. Hagerman National transferred 87,452 surplus fingerlings (1,895 pounds) to Niagara Springs Hatchery during September. We ended the fish year with 697,478 fish, weighing 14,981 pounds, in our hatchery raceways.

The following chart shows the numbers and pounds of fish on hand 30 September 1982 from the various sources and the numbers of eggs or fish received.

Eyed eggs	Total received	On hand 30 Sept.	% of no. received	Pounds on hand 9/30
Pahsimeroi	2,313,339	251,541	10.9	6,282
Oxbow	253,776	115,725	45.6	3,049
Total	2,567,115	367,266		9,331
<u>Fish</u>				
Pahsimeroi	274,960	242,865	83.3	2,373
Hagerman Natl.	87,452	87,347	99.9	3,277
Total fish	362,412	330,212		5,650
Grand total	2,929,527	697,478		14,981

FISH HEALTH

Niagara Springs Hatchery planted 1,349,355 of the 1,365,282 fish on hand 1 October 1981, or 98.8% survival from 1 October until planting was completed. During the period from 1 October 1981 through the end of planting 24 April 1982, the only malady encountered was an incidence of sore back disease of undiagnosed origin in two ponds. Purina 4X treatments were used to discourage secondary infections. The steelhead were in excellent condition at the time of release.

We received eggs from later takes in the Pahsimeroi run this year in an effort to keep down the size of the smolts released. The eggs we received were soft, and the egg mortality was higher than in previous years.

Soon after hatching, the steelhead fry began dying from I.H.N. virus (Infectious Hematopoietic Necrosis). By 30 September 1982, we had lost 89.1% of the fish from the Pahsimeroi origin-eyed eggs, and 54.4% of the fish from Oxbow origin-eyed eggs. We also received fry from Pahsimeroi Hatchery during August and September. These fish began dying of I.H.N. shortly after arrival at Niagara Springs Hatchery. We had lost 11% of these fish by 30 September 1982, when the fish year ended. We also received 87,442 fish from Hagerman National Hatchery in September. These steelhead were from eggs taken earlier in the Pahsimeroi run. The mortalities on these have remained near normal at all times.

We have kept densities on the I.H.N.-infected fish as low as practical, and we have made a concerted effort to thoroughly disinfect all equipment used in the ponds and hatchery vats.

Drip treatments of Purina 4X have been used as a prophylactic to control secondary infections, as well as to clear up some bacterial gill disease in the group of fish brought to this hatchery from Pahsimeroi Hatchery. The disease I.H.N. had pretty much completed its course by 30 September, with mortalities ranging from zero to 250 fish per raceway per day, or about 600 fish per day total from all raceways. Three raceways of fry from Pahsimeroi comprised over 80% of the total daily mortality at this time. In general, the fish on hand 30 September were in good condition.

FISH RELEASES

Our smolt planting began 2 March 1982, and the last load was planted on 24 April 1982. The Snake River below Hell's Canyon Dam received 354,150 fish that weighed 79,500 pounds. Some eight loads, 47,000 pounds of fish totalling 227,400, were hauled to Hell's Canyon by Idaho Department of Fish and Game fish transport trucks. The remaining 126,750 fish that weighed 32,500 pounds were hauled by a transport unit owned by Idaho Power Company. The average smolt size planted at Hell's Canyon was 4.45 fish per pound.

The Pahsimeroi River received 995,205 fish weighing 294,850 pounds. The Idaho Department of Fish and Game owned tankers hauled 19 loads of fish numbering 426,580 which weighed 133,100 pounds. The Idaho Power Company owned tanker hauled 568,625 fish, weighing 161,750 pounds, in 25 loads. The average smolt size hauled to the Pahsimeroi River was 3.38 fish per pound.

FISH FEED UTILIZED

A total of 663,850 pounds of feed was fed during the year to produce 344,169 pounds of fish flesh. The conversion rate for the year was 1.93:1 pound of feed per pound of fish produced. The total feed cost was \$141,396.46, including three percent sales tax in the amount of \$4,118.37. It cost \$.411 for feed to produce a pound of fish gain.

Feed size	Cost/pound	Pounds used	Cost
No. 1 fry	.2850	400	114.00
No. 2 fry	.2850	1,850	527.25
No. 3 fry	.2850	2,600	741.00
No. 4 fry	.2500	3,300	825.00
No. 5 crumbles	.2450	13,360	3,273.20
3/32 pellet	.2025	1,460	295.65
3/32 pellet	.2215	115,820	25,654.13
4/32 pellet	.1975	27,440	5,419.40
4/32 pellet	.2120	144,380	30,608.56
5/32 pellet	.1975	342,240	67,592.40
5/32 pellet sack	.2025	11,000	<u>2,227.50</u>
Totals		663,850	137,278.09
Sales tax-3%			<u>4,118.37</u>
Total cost			141,396.46

HATCHERY IMPROVEMENTS

Idaho Power Company replaced the 1959 Fish and Game 49-foot Golden State housetrailer with a 1976 Kit Oakcrest mobile home. This 14 x 66 feet three-bedroom unit is a vast improvement over the old trailer. One of the fish culturists resides in this mobile home.

SPECIAL STUDIES

Two groups of approximately 40,000 steelhead each were adipose fin-clipped and tagged with coded-wire tags on 3, 4, 5, and 6 November 1981. One group of these fish (40,000) was vaccinated on 20 January 1982 with vibrio vaccine. The second group was used as a control. These steelhead were checked for tag retention on 29 March 1982. The vaccinated lot retained 96% of their tags and the control retained 98% of their tags. These fish were released into the Pahsimeroi River 7, 8, and 9 April 1982. The purpose of this study is to determine if vaccinated fish would return in greater numbers than unvaccinated fish.

MISCELLANEOUS ACTIVITIES

A number of area schools brought classes to tour the hatchery this year. Idaho Power's public relations person scheduled some tours, others came on their own. Idaho Power also brought in a group of senior citizens for a tour. Gar W. Workman of Utah State University brought in a group of fisheries students to tour our hatchery, as well as others in the area.

Idaho Department of Fish and Game set up a special budget to allow us to help with special projects such as check stations in the region. This went into effect 1 July 1982. As of 30 September, we had spent a total of 80 hours on check stations and helping other hatcheries.

David Parrish spent 269 hours at Lower Granite Dam helping with the downriver fish transportation project. This project was also on a special budget.

Idaho Power Company's maintenance crew spent quite a number of hours lending their expertise to keep Niagara Springs Hatchery running properly. They replaced the decking on the bridge and painted the bridge and feed conveyor system. They also performed general maintenance throughout the year. Bob Butler and his crew deserve a special thanks for their help.

The hatchery crew replaced all the dam boards in the headrace this summer. The old boards were badly deteriorated.

HATCHERY NEEDS

Niagara Springs Hatchery needs an improved effluent-handling system. The present system cannot handle the cleaning flow from even one raceway. An improved system should be able to handle the cleaning flows from at least three raceways simultaneously.

A concrete dam and headgate systef at the intake pool is needed to enable us to divert the water to the hatchery or over the dam as needed. Presently, we have to wait for Idaho Power Company to bring in equipment to put in the dam or to remove it.

We also need a permanent flow meter in the intake pipe to the raceways. Since we are not engineers or hydraulics experts, our present measuring-stick method would probably hold little weight in a water-rights battle.

A garage at the lower end of the raceways for the lawn tractor and mowers and related equipment would make room in our present garage for the pickup when needed.

A steam cleaner would be useful for disinfecting hatchery vats, ponds, and equipment, as well as for cleaning equipment.

A chain saw would enable us to prune broken branches and the occassional fallen tree around the hatchery. Presently, we rely on personal equipment for these chores.

ACKNOWLEDGEMENTS

Hatchery staffing during the year included: Charles R. Quidor, Fish Hatchery Superintendent III; David Gillman, Fish Hatchery Superintendent I; David May and David Parrish, Fish Culturists.

We also had four CETA employees for various parts of the summer. They were Terry Driesel, Tod Driesel, Cindy Ralstin, and Dale Tully.